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Edmund G. Brown Jr.
Governor

January 12, 2018

Mr. Jeff Cast
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The Dow Chemical Company
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Pittsburg, California 94565

Certified Mail # 70170660000105479669

**FIRST NOTICE OF DEFICIENCY FOR PERMIT RENEWAL APPLICATION FOR THE
DOW CHEMICAL COMPANY HAZARDOUS WASTE FACILITY,
901 LOVERIDGE ROAD, PITTSBURG, EPA ID NO. CAD 076528678**

Dear Mr. Cast:

The Department of Toxic Substances Control (DTSC) has completed its technical review of the RCRA Hazardous Waste Facility Permit Application dated January 2016 for the Block 560 Drum Storage Area located at 901 Loveridge Road, Pittsburg, California 94565, hereinafter referred to as the "Application". The Application has been reviewed for compliance with the applicable requirements of California Code of Regulations, title 22, division 4.5 and the Health and Safety Code, division 20. DTSC has determined that the Application is deficient. The enclosed comments comprise the Notice of Deficiency (NOD) issued for the Application. DTSC would like to schedule a meeting to discuss the deficiencies. I will contact you shortly to schedule this meeting.

The following must be submitted by February 14, 2018:

- 1) Two hardcopies and one electronic PDF copy (CD or flash drive) of the complete, clean version of the revised permit application. The revised permit application must be a complete application with all sections, figures, tables, appendices, calculations, attachments and all information required by California Code of Regulations, title 22, division 4.5 and the Health and Safety Code, division 20. In other words, the revised permit application must be a stand-alone document with all deficiencies corrected.
- 2) One hardcopy redlined/strikeout version of the Application showing the changes that have been made as requested in the NOD.

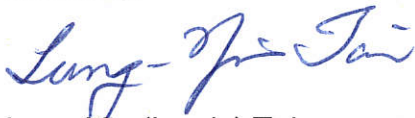
Mr. Jeff Cast
The Dow Chemical Company
January 12, 2018

- 3) One hardcopy of the written response to each of the deficiencies identified in the NOD. In responding to each of the deficiencies, restate the deficiency and identify the page number(s) in the revised permit application where each deficiency has been addressed.

Please note that pursuant to Health and Safety Code section 25200.8 and California Code of Regulations, title 22, section 66271.2(e), DTSC may deny permit applications based on a failure of the applicant to respond to a NOD or when the applicant responds with substantially incomplete or substantially unsatisfactory information.

If you have any questions, please contact me at Lung-Yin.Tai@dtsc.ca.gov or 916-255-3615.

Sincerely,



Lung-Yin (Lewis) Tai
Project Manager
Permitting Division

Enclosures

ATTACHMENT A - NOTICE OF DEFICIENCY SPECIFIC COMMENTS

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**ATTACHMENT A
NOTICE OF DEFICIENCY SPECIFIC COMMENTS**

**FIRST NOTICE OF DEFICIENCY FOR
THE DOW CHEMICAL COMPANY, PITTSBURG PLANT
BLOCK 560 DRUM STORAGE AREA HAZARDOUS WASTE FACILITY
EPA ID NO. CAD076528678**

The results of the Department of Toxic Substances Control (DTSC) technical review for the Hazardous Waste Facility Permit Application (Application) of the Dow Chemical Company Pittsburgh Plant (Dow) are presented below. The technical review is formatted to correspond with the sections presented in Dow's permit application. For each deficiency, the following are provided: (1) the requirement (i.e. relevant statute and/or regulation, where applicable) which provides the basis for the deficiency; (2) the part/section/page in which the deficiency is found in the Application; and (3) instructions for remedying the deficiency. The requirement in each comment uses a bracketed reference code, which points to a specific Technical Completeness Checklist item.

Comments

1. [A-4] Section A. Part A General Information Requirements: Pursuant to California Code of Regulations (CCR), title 22, sections 66270.13(d), the Application must include the information of the operator's name, address, telephone number, ownership status and status as Federal, State, private, public or other entity. Pursuant to CCR, title 22, Section 66270.13(e), the Application must include the name, address, and phone number of the owner of the facility.

On August 31, 2017, an article titled "Dow & Dupont's Merger of Equals to Close on August 31, 2017", was announced in Industry News. It is unclear if the merger changed the names, addresses, phone numbers, owner and operator of the facility.

Facility must submit the merger notification letter to DTSC. The Application must be revised so that all the names, addresses and phone numbers are changed to the new owners as reported in the merger notification letter, if necessary.

2. [B-1] Section B. Facility Description / General Description: Pursuant to CCR, title 22, section 66270.14(b)(1), the Application is required to provide a general description of the facility.

- a) General Description of the Facility: In Section B-1 it states that the Dow facility occupies 513 acres. However, in Section I.4 of the Appendix G indicates the facility occupies a total of 1,000 (= 450 + 200 + 350) acres.

The Application must be revised to change the acreage information for consistency between Section B-1 and Section I.4 of the Appendix G.

- b) County Assessor's Parcel Number: The county assessor's parcel number(s) is (or are) required to reference to the precise physical location of the Block 560 Drum Storage Area, the Hazardous Waste Management Unit. This number(s) is (or are) not found in the Application.

The Application must be revised to provide the county assessor's parcel number(s) to reference to the physical location of the Block 560 Drum Storage Area.

3. [B-2a] Section B. Facility Description / General Requirements: Pursuant to CCR, title 22,

section 66270.14, the Application requires certain technical data, such as design drawings and specifications, and engineering studies shall be certified by an independent, qualified professional engineer registered in California.

In Appendix E (Drum Storages, Coating Specification, and Engineer Certification), Figures E-1 and E-2 show a seven-inch high and six-inch wide perimeter concrete curb. However, the figure and calculations in the November 12, 2015 letter from JDH Corrosion (at the end of the Appendix E) shows and uses a six-inch high berm in the secondary containment capacity calculations. DTSC also noted a typo on the page 2 of the calculations

(129' instead of 19' in the overall volume). The Application must be revised to clarify the correct curb/berm height and revise the calculations.

4. [B-2a(3)] Section B. Facility Description / Surface Waters Requirement: Pursuant to CCR, title 22, section 66270.14(b)(18)(C), the topographic map shall clearly show the surface waters including intermittent streams.

Map #1 and Map #2 were reviewed. Map #1 was found to have surface water features depicted on the property. However, the mapped features were not easily distinguishable from other man-made surface water features on the site property.

The Application must be revised to label the intermittent stream on the eastern portion of the facility and to be symbolized appropriately on Map #1.

5. [B-2a(11)] Section B. Facility Description / Drainage and Flood Control Barriers Requirement: Pursuant to CCR, title 22, section 66270.14(b)(18)(K), the Application must clearly show the drainage and flood control barriers.

Section B-2 says the barriers for drainage or flood control are provided in Map #2 in the Section B-2 of the Application. However, they are not found on Map #2.

The Application must be revised to show the barriers for drainage or flood control on Map #2.

6. [B-2a(13)] Section B. Facility Description / Information Requirements for the location of solid waste management units (SWMUs): Pursuant to CCR, title 22, section 66270.14(d)(1)(A), the Application must clearly show the location of each SWMU.

Section I-1 of the Application states there were 25 SWMUs identified at the Dow Pittsburg facility in the 1986 USEPA's RCRA facility Assessment (RFA) Report. It further states that the descriptions, actions required, and status of these SWMUs are summarized in Table 4 of the RWQCB Order R2-2002-0007. More relevant information of the SWMUs is also stated to be described in other RWQCB Orders (e.g. 87-064, 98-059, R2-2002-0007, and R2-2002-0014). RWQCB Orders are not found in the Application and the locations of the SWMUs are not shown in the Application either.

The Application must be revised to add detailed information regarding the location of the SWMUs from the RFA report, and the relevant RWQCB Orders (e.g., 87-064, 98-059, R2-2002-0007, and R2-2002-0014 etc.).

7. [B-3a] Section B. Facility Description / Seismic Requirements: Pursuant to CCR,

title 22, section 66264.18(a), the Application must present several seismic calculations to meet the seismic requirements. Pursuant to CCR, title 22, section 66264.175(c), the Application must provide a written statement signed by an independent, qualified professional engineer, registered in California, that indicates that the containment system is suitably designed to achieve the requirements of section 66264.175.

The information in Section B-3a addresses the fault rupture. However, it does not address the seismic and geologic hazards. The information to be provided in this section should be site-specific to the Block 560 Drum Storage Area.

The Application must be revised to expand the information in Section B-3a to include the seismic and geologic hazards such as ground shaking, lateral spreading and liquefaction which could affect the site. Also, more information should be included to demonstrate that the site will not pose a threat to human health and the environment when subjected to a maximum credible earthquake (MCE). The evaluation should be performed using the most current seismic hazard analysis methods. Mitigation measures should be included if the evaluation shows that the site will not perform adequately when subjected to the MCE.

8. [C-3] Section C. Waste Characteristics / Waste Analysis Requirements Pertaining to Land Disposal Restrictions: Pursuant to CCR, title 22, Chapter 18, Land Disposal Restrictions (LDR) generally apply to all persons who generate, transport, treat, store, or dispose of a restricted hazardous waste.

Though it is understood that Dow only stores in Block 560 Drum Storage the hazardous wastes generated onsite and the hazardous wastes will not be stored over one year, Dow does have some LDR applicable requirements. Sections C and C-3 of the Part Application state that Dow follows the LDR. However, the last parts of Sections in C-3b and C-3c also state that LDR requirements do not apply to the waste stored at the Block 560 Drum Storage Area. If the LDR does not apply as the Application has claimed, this Application has not explained how the wastes stored at Block 560 Drum Storage Area qualify for any exemptions. If LDR applies, the Application has not clearly addressed how documentation is created and filed to be in compliance with the LDR and how wastes are characterized/identified and tracked while managed at Dow.

The Application must be revised to clearly state how wastes subject to LDR are identified and how Dow meets all the recordkeeping requirements.

9. [C-3a(7)] Section C. Waste Characteristics / Lab Packs Containing California List PCBs or Dioxins: Pursuant to 40 CFR 268.42(a), the wastes listed in the table in §268.40 "Treatment Standards for Hazardous Wastes" must be treated using the technology or technologies specified in the table entitled "Technology Codes and Description of Technology-Based Standards" in §268.42. PCBs is listed in the table in §268.40.

Block 560 Drum Storage Area is not authorized to store PCB containing waste, per Table 2-1 in Appendix C of the Application or Table 1 (Part IV) of the current permit. Why does Figure 3-4 In the Application shows the use of a PCB Waste Label? Site Applicable Task 07G19 also asks to submit a PCB Disposable Report. Personal Training for

Warehouse Management Training (Table G-4) includes a training on PCB storage area.

Facility must verify whether or not PCB containing waste may be stored at Block 560 Drum Storage Area.

10. [C-3b(1)] Section C. Waste Characteristics / Retention of Generator Notices and Certification: Pursuant to CCR, title 22, section 66268.7(a), there are specific requirements regarding to the retention of Generator Notices and Certification, if the generator determines they are managing a waste or soil contaminated with a waste subject to LDR regulation. Section C-3b of the Application states that special recordkeeping requirements for treatment facilities and land disposal facilities do not apply to Dow because Dow only treats hazardous wastes generated onsite. That is not a listed condition to meet the LDR exemption criteria. Dow has not demonstrated how the LDR does not apply the wastes stored at this Block 560 Drum Storage Area.

The Application must be revised to address the LDR applicability and which the recordkeeping procedures will be used to meet the LDR requirements.

11. [C-3b(4)] Section C. Waste Characteristics / Wastes Shipped to Subtitle C Facilities: Pursuant to CCR, title 22, section 66268.7(a), hazardous waste generators must identify which LDR treatment standards apply to the waste.

Section C-3b of the Application states that Dow prepares generator notices to accompany hazardous waste shipments offsite. These notices include hazardous waste codes and manifest numbers, a list of constituents of monitoring for F002 and F003 wastes and other data. This follows the LDR requirements. But the next paragraph states that special recordkeeping requirements for treatment facilities and land disposal facilities do not apply to Dow because Dow only treats hazardous wastes generated onsite.

Along with NOD comments #8 and #10, the Application must be revised to clarify that the LDR applies to the operations and management practices at Block 560 Drum Storage Area, and to demonstrate what efforts are to ensure CCR, title 22, section 66268.50 (Prohibitions on Storage) will be followed and how Dow's waste analysis plan and recordkeeping procedures meet all other LDR requirements. The word of "treat" must also be removed from Section C-3b, or Facility should consider to re-write various parts of Section C to ensure consistency and avoid confusion.

12. [C-3c] Section C. Waste Characteristics / Restricted Wastes Stored in Containers: Pursuant to CCR, title 22, section 66268.50(a)(2)(A), each container must be clearly marked to identify its contents and the date each period of accumulation begins.

Section C-3c of the Application states that Dow does not store waste subject to LDR at the Block 560 Drum Storage Area for more than 1 year, therefore this section is not applicable. Storage period of accumulation of no more than 1 year does not qualify for the exemption from the LDR regulation. The hazardous wastes stored at the facility still has the recordkeeping requirements to meet the LDR requirements.

Along with NOD comments #8, #10 and #11, the Application must be revised to address the LDR applicability and to show how all the recordkeeping requirements will meet the LDR

requirements.

13. [D-1a] Section D. Process Information - Containers / Containers with Free Liquids: Pursuant to CCR, title 22, section 66264.175(b)(5), "If the collected material is a hazardous waste under chapter 11 of this division, it shall be managed as a hazardous waste in accordance with all applicable requirements of chapters 12 through 16 of this division. If the collected material is discharged through a point source to waters of the United States, it is subject to the requirements of section 402 of the Federal Clean Water Act, as amended (33 U.S.C. section 1342)."

Section D-1c Secondary Containment System Design and Operation of the Application states that "Accumulated rainwater from the sump will be visually inspected for sheen or odor before manual transfer to a process water tank at the Chloronolysis plant." During a DTSC's site visit to the Facility, an Excluded Recyclable Material tank was observed and explained that the liquids from the sump are collected and transferred to this tank, before transferring to the process plant. The liquid is considered a hazardous waste. However, this tank is not permitted as a hazardous waste management unit (HWMU).

The Application must be revised to explain why this tank is not a HWMU, although it is accepting a liquid that previously was fully regulated hazardous waste.

14. [D-1a(3)(a)] Section D. Process Information - Containers / Requirement for the Base or Liner to Contain Liquids: Pursuant to CCR, title 22, section 66264.175(b)(1), a containment system shall have a base to underlie the containers which is free of cracks or gaps and is sufficiently impervious to contain leaks, spills, and accumulated precipitation until the collected material is detected and removed.

The first sentence of Section D-1d of the first bullet and in the first paragraph states that the concrete coating is compatible with the waste stored (except for limited resistance to some hazardous waste containing organic liquids) ... It is not clear if the text should read "resistance" or susceptible.

The Application must be revised to clarify the word selection.

15. [G-1] Section G. Contingency Plan / Contingency Plan: Pursuant to CCR, title 22, section 66270.14(b)(7), Facility shall provide a copy of a detailed contingency plan required by chapter 14, article 4, as a general information requirement.

Section F-1 of the Application has not included in the contingency plan the response to seismic and geologic hazards as well as other natural hazards.

The Application must be revised to include in the contingency plan, the information that complies to the seismic and geologic hazards and other natural hazards requirements. (See NOD comment #7.)

16. [I-1b] Section I. Closure & Postclosure Financial Assurance Requirements / Time and Activities Required for Partial Closure and Final Closure Activities: Pursuant to CCR, title 22, section 66264.112(b)(4), the closure plan shall provide a detailed description of the steps needed to remove or decontaminate all hazardous waste residues and contaminated containment system components, equipment, structures, and soils during partial and final closure, including, but not limited to, procedures for cleaning equipment and removing contaminated soils, methods for sampling and testing surrounding soils, and criteria for

determining the extent of decontamination required to satisfy the closure performance standard. Items a, b, and c below pertain to the inspection and sampling activities required for Closure

- a) Section H-1b(3), Task 3. Inspection and Sampling - The Application proposes a total of 12 soil samples will be collected at four locations (two in each storage bay). This number of concrete sampling locations and the number of soil sampling locations will not be sufficient to achieve USEPA's recommended statistical confidence level. USEPA recommends at least eight to ten samples per population (See page 42 at: https://clu-in.org/conf/tio/ProUCLBasic_030911/prez/prouclbasicpdf.pdf). For stratified soil, each soil sampling depth is considered a separate population.

The Application must be revised to state that at least eight to ten samples for each population will be collected (i.e., 8-10 concrete samples and 8-10 soil samples at each depth).

- b) Section H-1b(3), Task 3. Inspection and Sampling - The Application does not specify collection procedure for soil samples for volatile organic compounds (VOCs).

The Application must be revised to specify that USEPA Method 5035 will be performed for the collection of soil samples for VOC analysis.

- c) Section H-1b(3), Task 3. Inspection and Sampling - The Application states the clean closure performance standard for soils will be background for metals, non-detect for organics, or health-based levels approved by DTSC. However, the closure plan does not specify the background concentrations for metals, detection levels for organics, or the health-based levels that will be used.

The Application must be revised to include information for:

- (1) the background concentrations for metals, detection levels for organics, or the health-based levels that DTSC must reviewed in order to determine whether they can be used as clean closure performance standards. The information must be represented in a tabular format. Background samples should be collected in areas that were not affected by site activities Detection Limits should be less than health-based levels to be identified as Reporting Limits.
- (2) the statistical methods to compare soil samples to the background samples, e.g. t-tests or mean tests. The data should be normally distributed; if the distribution is not normal, alternative tests should be used. Pro-Upper Confidence Levels can be also used to determine background concentrations (i.e. upper confidence levels).

17. [I-4] Section I. Closure & Postclosure Financial Assurance Requirements / Closure Cost Estimate: Pursuant to CCR, title 22, section 66264.142(a), the owners or operators are required to prepare and submit a detailed written estimate of the cost of closing the facility in accordance with specific requirements.

The Closure Cost Estimate provided in Table H-1 of the Application does not provide sufficient details to evaluate the work to be performed for the closure of the Drum Storage

Area. More detailed cost information is required to validate the accuracy of unit costs and individual line items (as in Section H-1b) in the estimate.

The Application must be revised to provide more information to evaluate all closure costs for the units, which must include labor costs and man-hours (including concrete coring costs), unit costs and equipment decontamination costs (including pressure washing), equipment rental, sampling analysis of sub-slab, soil, sump water, and decontamination waste (including soil, wipe sample collected, water, concrete core sampling,... etc.), shipment costs of all waste (both inventory waste and decontamination waste), off-site treatment and disposal costs (including third party treatment and disposal costs), plus any additional incidental costs (i.e. number of hours for a geologist, engineer, scientist, QA/QC personnel, field technician, contingencies, ... etc.) that are associated with the specific closure tasks/activities.

18. [Gen] Section Gen. General Requirements / Grant Deed or Lease: To establish the current owner of the facility real property, a copy of the most recent grant deed is required. Since the facility operator is different from the real property owner, a copy of the lease or other legal document establishing the right of the operator to operate a hazardous waste facility on the property is also required. If there is a chain of authorizing documents between the real property owner and the facility operator, all documents in the chain must be provided.

The Application does not have a copy of the recent grant deed and a copy of the lease or establishing the right of the operator to operate a hazardous waste facility.

The Application must be revised to provide a copy of the recent grant deed and a copy of the lease or establishing the right of the operator to operate a hazardous waste facility.